Distr.
LIMITED

ID/WG.474/1
6 July 1988

ENGLISH

United Nations Industrial Development Organization

Workshop for UNIDO/INTIB National Focal Points on
Industrial Information Networking and Co-operation

Moscow, USSR, 30 May - 3 June 1988

INTERNATIONAL CO-OPERATION IN THE INFORMATION FIELD - SOME NEW TRENDS AND TENDENCIES*

Prepared by

A. Wysocki**

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** Adviser, Institute for Scientific, Technical and Economic Information (ISTEI), Warsaw, Poland.

V.88-26610

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1. Introduction

International cooperation in the field of information transfer, broadly conceived, emerges from cooperation in science and technology, which is as essential today as it has been in the past.

In the past, the shaı ıg of knowledge and expertise brought about great benefits to all people and has been responsible for most of the advances of civilization.

Today it contributes both to the vigour of science and technology and to the health and well-being of our planet and its inhabitants. Through cooperation we can help to meet our global responsibilities, and we can address issues that transcend the concern of every nation. Science and technology is an international enterprise and communication is central to its existence.[7/]

The need for international cooperation in the field of information is justified by several factors such as:[9/]

- information dependence. It is an internationally recognized fact that self-sufficiency in scientific and technological information, even in large industrialized countries, cannot be achieved.

- technological factors. The development of advanced computerized

systems and networks require common rules, standards, and protocols. This is a highly complex and multifacted issue, which cannot be solved at a national level only.

- economic factors. The increase of volume of information to be processed, combined with the increasing costs of manpower, is driving the policy makers of information systems to consider the redistribution of tasks at the international level and input sharing in order to make their services more economical.

It should also be recognized that information itself is becoming an important political commodity. As issues grow more interrelated, it will be increasingly difficult for nations to have at their disposal the full range of information on which to base their policy decisions.

As a consequence of all these factors, we are observing, on the one hand, the establishment and development of international programmes and systems which facilitate access to information and, on the other hand, we note the development of the private information sector, mostly in the USA and in Western Europe, which cooperates largely with partners across national boundaries and preserves the principle of competition trying to expand its services, products, and to reduce their costs. An international information market becomes a reality.

The scope of international cooperation in the information field covers a wide range of issues such as:

- establishment and development of cooperative programmes;
- establishment of cooperative information systems and services;
- commercial, international cooperation;
- informal international cooperation.

2. International Programmes

Many international programmes of cooperation in the field of information transfer have been launched by international organizations starting in the '60s and in the early '70s.

Most of these programmes have been developed within the family of the United Nations and other intergovernmental and nongovernmental organizations.

Within the UN there are programmes of a general nature, such as Unisist of Unesco, providing a conceptual framework for the establishment of information systems and services, and information programmes oriented towards discipline, mission, or source. These latter programmes are mainly directed towards the development of information tools for concrete subject fields,(e.g. agriculture, industry, health, etc.) As examples the programmes of FAO, UNIDO, ILO, WHO, WIPO may be mentioned.

Development of similar programmes are observed within international economic organizations, such as: Commission of the European Communities (ESPRIT, RACE, AIM, PRIVIE, DELTA), Organization for Economic Cooperation Development (OECD), or programmes of the Council for Mutual Economic Assistance (CMEA).

Among the international information programmes, subjects are mission-oriented. There are programmes of non-governmental organizations, as IFLA or ICA which are also contributing substantially to international cooperation. The IFLA core programmes, such as Universal Dataflow and Telecommunications, or Universal Bibliographic Control and International MARC contribute to the harmonization of information transfer and unification of methods of information handling. The common goal of these programmes is among other things:

- to facilitate transfer of subject-oriented information through the establishment information tools, systems, or services.

The contents of the programmes cover a large spectrum of activities being the subject of interest of participating countries, such as:

- assistance to member countries, training, research, standardization of methods, etc.

3. International Information Systems and Services

Harry East in his paper gives the categorization of models of cooperation previously developed by John Page, namely: 4/ 6/

- national systems with international participation;
- internationally managed/centralized systems;
- internationally managed/decentralized systems.

This typology could be reduced to two main groups of information systems:

a. internationally sponsored systems
b. national systems and services with international scope and orientation.

The first group is sponsored by organizations whose menbers are national governments or governmental bodies (UNIDO-INTIB, FAO-AGRIS, IEAE-INIS, etc.).

The second group was created not as a result of international agreements, but become international through the need for multilateral cooperation for international input, and through the coverage of literature on a worldwide basis (Chemical Abstracts Service, INSPEC, Medlars, etc.). Most of these systems work on a commercial basis.

4. International Cooperation of Commercial Information Systems

This kind of cooperation, based on the newest information technology, become recently very dynamic. It consists essentially of online access to bibliographic and other databases. The statistics published by Cuadra show their permanent growth. In 1987 there were registered already about 3500 databases, 1600 producers, more than 500 online services. In 1979/80 there were only 400 databases, 221 producers, and 55 online services. It should be stated here that the information is more and more considered as a commercial product and that the international information market has been largely developed with information databases producers, hosts, vendors, brokers and other intermediaries. 3/

5. Informal International Cooperation

In addition to the formal frameworks for international cooperation, another important mode of communication should also be mentioned, namely, informal international cooperation. It has been developed chiefly among scientists, but is also observed among engineers, technicians, and librarians. The user studies show, for example, that informal technical visits, exhibitions, and direct contacts constitute a very valuable source of information and inspiration, highly required and appreciated by users. In most cases these contacts are placed higher in the hierarchy of users' needs than other sources of information.

So far the introduction to the subject of international cooperation in the field of information transfer. Now we would like to review some of the existing trends and tendencies observed in these fields.

In the information market we observe new developments and changes, caused mainly by the rapid application of research in electronics,

computers and telecommunications.

It will be quite impossible in a short paper to review all of them. Therefore, we would like to present some tendencies which seem to us significant for international cooperation in information transfer, namely:

- changing needs for information
- development of databases
- expansion of networks
- new role of intermediaries.

6. New Needs for Information

Modern society is growing in a more complex way and its components need more and more information to function. Business, government, research and education - all need to know more to fulfill their purposes in an environment that is continuously being reshaped by new forces. The business environment itself is not just more complex, but also more competitive. Newer and more specific markets, the government presence, and competition at home and abroad have all increased the importance of information-fueled activities like planning and marketing.5/

No organization contains enough knowlege to make decisions in the face of all these forces. The question arises if it is practical to develop expertise to meet these needs which are continuously changing. Organizations of all sizes face an ever-growing information shortage.

This phenomenon forced the policy makers at national level to reconsider the existing information policies, usually restricted to scientific and technological information and to expand the scope of such policies to cover the whole-spectrum of informational activities.

The rapid development of the knowledge-based industry, where information, combined with new technology, such as electronics, computers and telecommunications constitute an essential component,create new requirements, and expand substantially the information market.

The information market, which for many years was restricted to science and technology, becomes a complex market, with interrelated scope and orientation.

This market today covers all fields of interest, business, government, research, and individual users such as insurance, travel, transportation, education, legislation, etc. The libraries and information services should take this phenomenon seriously into account.

Increasing competition for domestic and foreign markets, the globalization of markets, and the pressure to develop new or improved products and services for increasingly sophisticated users, have greatly stimulated the demand for applied information market research. 1/

The electronic information industry's revenues increase dramatically year by year. A vast sum of money is earned by vendors and distributors of electronic information and data. However, only a minority recorded after tax profits. The market for online databases is oversubscribed. Consequently, new entrants to the marketplace need to gather accurate data on the scope for new products, like customer databases, and actual users' requirements, upon which to measure realistic revenue projections.

7. Development of International Market for Databases

The forecast of the present development of databases foresees their further acceleration. There are, however, some clear indications as to

the nature and function of the newly established databases.

The databases will be quite exclusively built on the market-based requirements and therefore will be more user-oriented - easy to use, and easy to understand. The professionalism will meet the user expectations. The information services will simplify entry into their systems in order to appeal to a broad business and consumer market. The information services will also more strongly evaluate databases, keeping only those that can sustain themselves profitably in order to reduce the complexity of choice to consumers. Profitability will become an essential issue as information will be treated more and more as a product and information activity as a business. 5/

It will be more and more difficult to find sponsors to finance and support databases and new online services with little or no economic return to the sponsors. Even the not-for-profit efforts will take a long, hard look at the usage of their databases in relation to their cost.

There are views that services of marginal interest will disappear, or, if they are unique services of vital information, users will be expected to pay the true costs of their maintenance. In addition, information activity in accordance with the market rules, will further enter into the competitive mainstream. The professionalism, the quality of information product, and the competitive price will be more and more the unique choice made by users.

The technological advances will greatly increase awareness of online information and will make it accessible to a much wider audience. The online access will practically become the main mode of access. The gradual establishment of Integrated Digital Services Network (IDSN) will substantially facilitate the transfer of information - a simple

phone line which allows users to simultaneously carry on voice conversation while gathering online data without the use of a modem.

In order to sustain the price of the more widely used online databases, their developers will search for other practical delivery media to amortize costs over multiple kinds of delivery systems. Their newly emerging digital disc storage system will offer a viable distribution alternative that will meet the needs of specific segments of the information market and will provide revenues to help sustain and develop traditional online products.

In addition to the reference databases such as referral or bibliographic - the full-text databases stored on CD-ROM - will steadily grow. Such services, which have already started (e.g. ADONIS system which provides complete, up-to-date, full-text collection of biomedical journals) will provide on demand high resolution laser-printed copies of articles or other texts.

8. Electronic Networks and Open Systems Interconnection

The present development of the new potentialities for electronic networking and for the exchange of the various combination of alphanumeric, pictorial, graphic, single- or multimedia information resources via international networks requires an appropriate framework for international cooperation which will facilitate the interconnection between the various networks and individual host computers.

One of the solutions already advanced and recently discussed by the International library and information community is Open Systems Interconnection (OSI).

OSI is the blueprint for communications among heterogenic systems,

capable of exchanging data meaningfully. It is the plan to which the enormously complex global information machine is being built. Without such a plan, adhered to strictly by organizations needing electronic communications, realization of the benefits of computer technology for information exchange will be substantially impaired. 2/

The fundamental objective of the OSI is to provide a globally agreed framework for the design of systems required to interoperate. This framework is known as the Basic Reference Model for Open Systems Interconnection (ISO-7498, Reference Model for Open Systems Interconection) CCITT recommendations (X.200 series, X.400 series). The ISO standard provides a common basis for the coordination of standards developed for the purpose of systems interconnection, while allowing existing standards to be placed into perspective within the overall reference model. Thus the reference model touches upon all aspects of the information source-sink paths, including physical media, networking, addressing error recovery, and application of specific considerations. The model represents a decomposition of communications between systems into a set of modules or layers. The ISO/CCITT OSI Reference Model consists of seven layers which, by mutual adherence to the established standards, permit the information systems to interoperate.

9. The Role of Intermediaries
Information Brokers, Consultants, and Information Officers

One of the tendencies observed in the information market, especially within small entrepreneurs, is the use of intermediaries, who can provide the required information on a commercial basis. Quite the reverse tendency is observed in the big industry, where the end-user is searching online databases without the participation of intermediaries.

Information brokers and consultants are, at present, mainly involved in cooperation with users at the national level;, however, there are also brokers operating across borders, especially in Western Europe, where the Common Market provided the favorable conditions for such a business. The special clientele of the information brokers are the small and medium sized enterprises and solo practitioners. The big industry uses its own information systems or services of large information firms.

Who is an information broker? An information broker in the simplest terms is one who looks up information for you on a for-profit basis. It could be an individual or a large firm. The source used and the process itself may be quite sophisticated, but the result is still that information is turned over to the client, who then does something with it. Information brokers are professionals in the field of library or information science, and at the same time they are businessmen. Most brokers emphasize business information, with scientific and technical information next. Busines subjects most commonly represented include marketing, planning, and competitive intelligence. The main trade of an information broker is to know how to provide to the client specific, well-focused information. 5/

The information broker has to be distinguished from an information consultant who tells you what to do with the information and how to do it. He also cooperates with solo practitioners or with small-sized enterprises.

In the big industry - the online searching by the end-user is a natural part of the information scenario. The factors in the information industry infrastructure which facilitate more end-usage are: 8/

- increasing full-text databases targeted at specific users' communities

- the increased penetration of the communicating micros
- the proliferation of networks, including international networks;
- improved and friendlier interface with users;
- simplifying mechanisms such as "interrogators" and "translation devices" and "intelligent gateways";
- some sources are only useful in the hands of the users.

The technical skill of the information professional in manipulating sources and equipment is therefore no longer a factor for accessing the data. The role of information officer as intermediary is changing and turning from exploiter to catalyst and manager who can assist the end-user in database organization and management, provide advice as to the selection of databases, and support users in a wide range of activities like training, cost effectiveness of searches, backup services.

10. Conclusions

The international cooperation in information transfer, justified by professional, technical, economic and political factors, remains as important at present as it has been in the past. However, the form, contents, and conditions of this cooperation are changing.

The international programmes developed by international organizations as well as the international systems show less dynamic tendency of development than the electronic databases, especially those accessible online, and information networks.

The information needs, especially in business and industry, become more complex and embrace the whole spectrum of items needed for modern decision-making processes.

A clear tendency of commercialization of information is observed and

establishment of national and international markets, which are more complex and not only restricted to science and technology as it has been in the past.

International information market research, caused by immense competition, became the only adequate method used before launching a new information product or service. The online access will be the main mode of access to databases, which show a tendency to be more specialized and sophisticated, but at the same time very easy to reach. The technological advances such as IDSN and CD-ROM will be gradually applied in the information transfer chain.

The new international frameworks are developed for electronic networking and communication. OSI seems to be one of the most promising concepts for international systems interconnection.

There are different tendencies observed in information searching and retrieval. On the one hand, we see the end-users accessing directly online to the national or international databases, and on the other hand the gradual evolvement of information brokers and consultants working on a for-profit basis for solo practitioners and small businesses. The role of librarians and information officers is changing from exploiters of collections to catalysts and managers of databases.

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